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## **Handling device in a vehicle**

### **SPECIFICATION**

#### **FIELD OF THE INVENTION**

The invention pertains to a handling device placed in a vehicle.

#### **BACKGROUND OF THE INVENTION**

Vehicles of all kinds (especially those whose passenger area is at least partially enclosed), in particular passenger cars, require a number of small items be available to the driver and passengers; these are items not necessarily directly related to the motion of the vehicle. For instance, these items might be used only in specific situations or might make the ride more comfortable for the driver.

#### **OBJECT OF THE INVENTION**

It is the task of this invention to provide a possibility of accommodating such handling devices in a simple manner.

#### **SUMMARY OF THE INVENTION**

In accordance with the invention, for a vehicle of the type described above this task is solved such that the handling device is a handling device attached in a removable manner to the wall by means of a fastener.

With this arrangement of the handling device, the driver or vehicle occupant can quickly grasp the handling device; on the other hand, the handling device has a fixed place. This considerably reduces the risk of mislaying the handling device, compared to a handling device which cannot be fastened in the vehicle. Also, in this manner the vehicle can be tidied up quickly. The users of the vehicle can quickly become used to the notion that the handling device has a fixed place; hence, they can grasp it at any time when needed, without having to search for it.

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Advantageous extensions of the invention result from the subclaims and from the description, in particular in conjunction with the drawings.

A handling device is especially appropriate which is located in or above a recess or indentation in the wall. In this manner, the handling device hides a storage space in which further objects can be accommodated.

The handling object can be attached permanently while being easily and quickly removable if it is affixed to the wall by means of a snap-on connection or by means of magnetic elements.

It is advantageous to place the handling device in the area of the center console of a vehicle. Objects which the driver occasionally requires during the ride can be located in a recess or indentation in the center console.

The handling device can be attached optically inconspicuously or not at all visibly if the handling device has tabs or snap-on notches on a side wall or on a side facing the recess, and if these tabs or snap-on notches interact with snap-on notches or snap-on recesses at the recess.

If the handling device features at least one opening for handling, then the handling device can be grasped easily, without requiring the user to remove the handling device from its fastener by means of focused pressure.

It is advantageous to design the opening for handling such that its diameter corresponds at least partially to the diameter of a cup – especially for a beverage, a common beverage bottle, a beverage can, or similar object. As an alternative, the opening for handling has a larger diameter. This makes it possible to grasp next to a beverage can or beverage bottle placed in the opening for handling. The opening for handling has either a circular or elliptical contour. Any other shape for the opening for handling is also imaginable.

The opening for handling features a partial lip made of elastic material, or a lip made of such material which runs around the entire circumference. This lip ensures that an object (especially a beverage) can be held tightly and without making noise.

A further possibility for easing grasping of the handling device is for it to have an indentation on its outer lateral contour, by means of which the handling device can be grasped.

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This invention deals in particular with a handling device to which a tool (especially an ice scraper, a screwdriver, a bottle opener, or similar object) is attached. Also, a light fixture (in particular a light-emitting diode and/or a coin holder) can be attached to the handling device.

Such a tool can be used in the area of the vehicle, or a passenger can use it there for his or her own purposes, such as in order to open a bottle or can.

A handling device is advantageous which features a first lip protruding from its outer lateral contour. This first lip is made of hard plastic, with a sharp outer edge. During frost conditions, this lip is used to remove ice from the window panes of the vehicle. Additionally or as an alternative, a lip made of a rubbery-elastic material is used which is suitable for removing moisture from the window panes.

This second lip is placed, for instance, on the opposing narrow side of the handling device, or above or below the first lip.

The first lip features corrugation, especially on one side, in order to scrape ice or snow from the outer side of a pane of the vehicle in a corrugated pattern.

As an alternative or additionally, a snow brush can be included. It can be placed, for example, on the narrow side of the handling device, opposite to the lip.

As an alternative or additionally, it is advantageous to have the handling device feature a notch, for instance approximately in the middle of its externally accessible surface. This notch can serve to hold a coin or bottle opener.

An advantageous design is to have the handling device consist of two flat elements which are joined together and cannot be taken apart. By tailoring the contour of the elements in the region where they join, any desired tools can be placed between these two elements. The tools protrude from the handling device.

In a variant, the handling device features at least one lip and/or plate placed between these elements and protruding laterally outward.

A handling device is especially appropriate with which a battery or rechargeable battery and a light fixture are placed between the elements. This way, the handling device can serve as an orientation aid in the darkness; it itself can be found easily, because it has a fixed location and can always be found again. If the batteries snap into the handling device from its underside, then they can be removed and replaced when they are discharged. Rechargeable batteries accessible from the underside via

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contact surfaces can be recharged via them by placement in a charger, if the rechargeable batteries cannot be removed from the handling device.

### BRIEF DESCRIPTION OF THE DRAWING

The above and other objects, features, and advantages of the invention will become more readily apparent from the following description, reference being made to the accompanying drawing in which:

- Fig. 1 is a bird's-eye view of the center console of a motored vehicle, equipped with a recess and a handling device covering the recess,
- Fig. 2 is a perspective drawing of the center console in accordance with Fig. 1, with the handling device removed
- Fig. 3 is an isometric drawing, with the individual parts shown separately
- Fig. 4 is a cutaway view along an intersection line IV – IV from Fig. 1,
- Fig. 5 is a cutaway view along an intersection line V – V from Fig. 1,
- Fig. 6 is a cutaway view along an intersection line VI – VI from Fig. 1, and
- Fig. 7 is a cutaway view along an intersection line VII – VII from Fig. 1.

### SPECIFIC DESCRIPTION

A carrier 1 (Fig. 1) for a center console is arranged in a passenger car between the driver's seat and the front passenger's seat. It extends in the direction of travel. The rear part of carrier 1 has only side walls 2 and 3, which can be placed on another component not shown here, such as an arm rest.

The front part of carrier 1 has a cover 4 (Fig. 3) with an opening 5 for accepting a tub-shaped insert 6. The insert 6 has a bottom 7 (Fig. 4) extending in the longitudinal direction of the center console. Both of its sides are narrow in the middle. The insert 6 also has a wall 8 running upward, essentially vertical or sloped slightly outward. A lateral rim 10 is connected to wall 8 via a ledge 9 (Fig. 3 – 7). The rim 10 protrudes beyond the cover 4, while the ledge 9 lies on a surface 11 lowered from the cover 4.

In order to ensure that the user cannot sever the connection between the insert 6 and the carrier 1 of the center console, the underside of insert 6 features latches 12. When the insert 6 is inserted into the carrier 1, these latches snap into the corresponding notches 13.

A handling device 14 (Fig. 2) shaped essentially like the bottom 7 lies on the ledge 9. The handling device 14 is connected with the insert 6, preferably by means of a

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fastener. A lug 15, on a narrow side of the handling device 14, is used as the fastener. In the wall of the insert 6 above the ledge 9 and the rim 10, there is a depression 15a which forms an undercut. The lug 15 locks into this depression.

On the narrow side across from the lug 15 or near this side, the handling device 14 also features notches or similar items. They can be pulled out of their locked-in position or inserted, by means of pressure (for instance when the handling device 14 is pulled out). Hence the handling device 14 is fastened to ledge 9 and cannot be lost, since it is held in the depression 15a and due to the notches.

As an alternative, a snap-together joint or a number of snap-together joints can be included, which are arranged in the area of the edge of handling device 14 and which elastically give way when the handling device 14 is pulled out.

As an alternative to the snap-together joints for fastening the handling device 14 on the ledge 9, magnetic elements can be placed on the lower part 17; they are attracted by related magnetic elements in particular in the area of ledge 9.

For optical reasons, the magnetic elements are arranged between the upper part 16 and lower part 17 such that they are externally invisible. Similarly, the related, permanently mounted magnetic elements in the area of the center console can be placed such that they are externally invisible.

Since the handling device 14 can be removed from the insert 6, objects such as a cell phone, a pack of cigarettes or a eyeglasses case can be placed inside.

The handling device 14 consists of an upper part 16 and lower part 17, which are basically structured in an identical manner. They are preferably made of hard plastic, such as polypropylene, or they are made of metal. The lower part 17 can be made of a different kind of material than the upper part 16.

The upper part 16 and the lower part 17 are both penetrated by openings 18, 19 for inserting beverage cans, beverage bottles and drinking vessels. Lips 20 protruding into the openings 18, 19 consist of elastic material, such as rubber. They make it possible to securely hold the object inserted in opening 18, 19 without vibrations, and they suppress noises between the object and insert 6 as well as the handling device 14.

It is advantageous for the lug 15 to be formed as a hard rubber lip, which can be used as an ice scraper. In one version, the lug 15 is placed between the lower part 17 and the upper part 16 such that it can be removed by lateral sliding whenever it is to be replaced by an element for ice scraping. Corrugation (not shown here) can be

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placed on the underside of handling device 14, in particular near one of the narrow sides; it is suitable for scraping ice when very hard ice adheres to a window pane of the vehicle. Also, a soft lip can be placed on the narrow side of handling device 14 opposite to the lug 15.

A light-emitting diode 21 is placed on the side opposite to the lug 15; it is supplied with electrical power by batteries 22 in the form of button cells. The batteries 22 either last the entire useful life of the light-emitting diode 21, so upper part 16 and lower part 17 can be joined unseverably during manufacture. Or these two elements can be joined by means of severable snap-together joints in such a manner that the batteries 22 or rechargeable batteries can be replaced. The light-emitting diode 21 is operated by means of operating button 27 (Fig. 6) placed on the surface of upper part 16 near the narrow side.

If the underside of the batteries 22 is flush with the lower surface of handling device 14, then they can be removed from below.

Between the openings 18, 19, the handling device 14 features a ridge 23 (Fig. 4) in which a depression 24 is placed. A spring 25 (preferably blade-shaped) is located at the bottom of the depression 24. An object can be placed in the depression, in particular a flat, round object such as a coin or a chip 25a for a shopping cart. The spring presses this object against a lateral lug 26, which prevents the object from springing out due to the vehicle's vibrations. Instead of spring 25, the upper part 16 of the handling device 14 can feature a depression for accepting the coin or several coins. The lug 26 can be crescent shaped, for example, and can be formed as a bottle opener or also serve as a bottle opener.

Various tools can be placed in the area of the lateral edges or on a surface of handling device 14 formed by the lower part 16 or the upper part 17. These tools can be arranged in a manner allowing them to be unfolded, like for common multifunctional tools. The handling device 14 features a recess 30, 31 in the middle of its long sides. With the recessed shape, it can be easily held in one hand.

An elastically cushioning pad 28 (Fig. 7) is placed on the bottom 7 of the insert 6. Thus, a beverage can 29 laterally supported by the lips 20 is held elastically and does not cause noises even when the vehicle vibrates.

Of course, a handling device 14 explained using a center console can be placed at other locations in a vehicle.